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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/832,093 | 04/11/2001 | Shigeo Ishikawa | Q64059 | 8684 |
| 7590 | 03/31/2004 | | EXAMINER | |
| SUGHRUE, MION, ZINN, MACPEAK & SEAS 2100 Pennsylvania Avenue, N.W. Washington, DC 20037 | | | NGUYEN, KHIEM D | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2823 | |

DATE MAILED: 03/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|-----------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/832,093 | ISHIKAWA, SHIGEO |
| | Examiner | Art Unit |
| | Khiem D Nguyen | 2823 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 02 January 2004 .

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-5 and 8-12 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-5 and 8-12 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 11 April 2001 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____ .

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 072903 .

4) Interview Summary (PTO-413) Paper No(s). _____ .

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____ .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 02, 2004 has been entered. A new rejection is made as set forth in this Office Action. Claims (1-5 and 8-12) are pending in the application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (e) the invention was described in–
 - (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
 - (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

1. Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Li et al. (U.S. Pub. 2002/0160113).

In re claim1, Li discloses a method of forming an oxide film, comprising the steps of (a) starting a supply of a reaction gas at a first flow rate into a chamber (FIG. 3: 18) in which a plasma is formed (page 3, paragraph [0024]), such that an initial film is formed on a center region of a wafer (FIG. 3: 20) via a first nozzle (FIG. 3: 56) provided on the

chamber above the center region of the substrate (page 3, paragraph [0027]) and (b) starting a supply of the reaction gas at a second flow rate into the chamber in which the plasma is formed via second nozzle (**FIG. 3: 34 and 34a**), wherein the second nozzle are provided on side walls of the chamber above the wafer (page 3, paragraph [0025]), after the step (a), while the supply of the reaction gas at the first flow rate continues such that the oxide film is formed on the initial film (page 3, paragraph [0028], page 4, paragraphs [0035]-[0038] and **FIG. 3**).

Nozzle (**FIG. 3: 56 and 64**) positioned over the center of the substrate (**FIG. 3: 20**) inherently producing the film on the center region.

In re claims 2 and 3, Li discloses the reaction gas is a compound gas containing Si and wherein the reaction gas is one of SiH₄ and SiF₄ (page 3, paragraph [0028]).

In re claims 4 and 5, Li has the same reaction gas flowing from (**FIG. 3: 34 and 34a**) and (**FIG. 3: 56**) using different flow rates (a mixture of gases from source (**FIG. 3: 58**) and also allows the user to optimize different start times by using different controllers (**FIG. 3: 37 and 60**) for the reaction gases for desired results (page 4, paragraphs [0035]-[0038]).

2. Claims 8-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Li et al. (U.S. Pub. 2002/0160113).

In re claim 8, Li discloses a method of forming an oxide film, comprising the steps of (a) forming an initial film from a center region of a wafer by supplying a reaction gas at a first flow rate, via a first nozzle (**FIG. 3: 56**) wherein the first nozzle is provided on the chamber (**FIG. 3: 18**) above a center of the wafer (**FIG. 3: 20**) (page 3, paragraph

[0027]) in which a plasma is formed (page 3, paragraph [0024]), such that an initial film is formed on a center region of a wafer (**FIG. 3: 20**), while a thickness of the film is equal to or thinner than 10 nm and (b) forming the oxide film on the wafer, by starting to supply the reaction gas at a second flow rate, via second nozzle (**FIG. 3: 34 and 34a**), wherein the second nozzle are provided on side walls of the chamber above the wafer (page 3, paragraph [0025]), after the step (a), while continuing to supply the reaction gas at the first flow rate (page 3, paragraph [0028], page 4, paragraphs [0035]-[0038] and **FIG. 3**).

Nozzle (**FIG. 3: 56 and 64**) positioned over the center of the substrate (**FIG. 3: 20**) inherently producing the film on the center region.

In re claims 10 and 11, Li discloses the reaction gas is a compound gas containing Si and wherein the reaction gas is one of SiH₄ and SiF₄ (page 3, paragraph [0028]).

In re claims 9 and 12, Li has the same reaction gas flowing from (**FIG. 3: 34 and 34a**) and (**FIG. 3: 56**) using different flow rates (a mixture of gases from source (**FIG. 3: 58**) and also allows the user to optimize different start times by using different controllers (**FIG. 3: 37 and 60**) for the reaction gases for desired results (page 4, paragraphs [0035]-[0038]).

Response to Amendment

Response to Arguments

In response to Applicant's argument that Li does not disclose, teach, suggest or even mention the gas supply timing from the central portion and the peripheral portion, examiner respectfully disagree. Li has the same reaction gas flowing from (FIG. 3: 34

and 34a) and (FIG. 3: 56) using different flow rates (a mixture of gases from source (FIG. 3: 58) and also allows the user to optimize different start times by using different controllers (FIG. 3: 37 and 60) for the reaction gases for desired results (page 4, paragraphs [0035]-[0038]).

For these reasons, examiner holds the rejection proper.

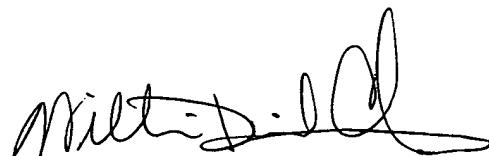
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D Nguyen whose telephone number is (571) 272-1865. The examiner can normally be reached on Monday-Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (571) 272-1855. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

K.N.
March 29, 2004



W. DAVID COLEMAN
PRIMARY EXAMINER